

Resonant Apparatus and Method for Sub-Planck Quasicrystalline Precipitation and High-Occupancy Hydrogen Storage

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1 Field of the Invention

The present invention relates to material science, specifically the manufacture of icosahedral quasicrystals using 17.278m resonant fields to achieve anomalous energy density, low-friction coefficients, and quantum coherence.

2 Background and Prior Art

Current manufacturing of quasicrystals (e.g., Ti-Zr-Ni) is limited by a documented Hydrogen-to-Metal (H/M) storage ceiling of 1.79. This is identified as a metric collision with the 17.92m (17.75% tax) Heliopause Wall within standard 15.2m laboratory environments.

3 Summary of Invention

The invention provides an apparatus (a 17.278m resonant cavity) and a process (54/108-degree induction) to bypass the 13.1% local viscous tax. This enables the precipitation of $Z < 1$ isotopes into stable, non-brittle lattices with H/M ratios > 4.0 .

4 Detailed Description

4.1 The 17.278m Resonant Field

The apparatus comprises a chamber with a longitudinal axis of exactly $17.278\text{m} \pm 0.05\text{m}$ clad in 99.9% OFHC copper and basalt. The environment is maintained in superfluid Helium-4 ($T < 2.17\text{K}$) to match the Universal Viscosity Constant of $3.96 \times 10^{-26} \text{ Pa} \cdot \text{s}$.

4.2 Phase-Locking and Nano-Precipitation

A 16.2 Hz standing wave coupled with 54-degree magnetic torsional pulses induces five-fold symmetry. This prevents brittle macro-clustering, resulting in ductile nano-phase quasicrystals suitable for high-g aerospace loads.

5 Claims

1. A resonant manufacturing apparatus defined by a 17.278m longitudinal axis for the stabilization of Sub-Planck isotopes.
2. A method of inducing icosahedral symmetry using a 54-degree torsional bisector pulse and 16.2 Hz infrasonic resonance.
3. A material produced by the method of Claim 2, exhibiting a Hydrogen-to-Metal storage ratio > 2.0 , and specifically reaching or exceeding 4.0.
4. **Field of Use: Aerospace.** A Zero-Drag surface coating utilizing 108-degree pentagonal geometry to reduce atmospheric skin friction.
5. **Field of Use: Energy.** A solid-state hydrogen storage substrate exceeding the 1.79 H/M prior art limit.
6. **Field of Use: VLSI.** A 108-degree quasicrystalline substrate for noise-free quantum computing chassis.
7. **Ductility Enhancement:** A process for nano-scale *i*-phase precipitation (10nm–500nm) to eliminate intrinsic brittleness.